



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/528,516

01/17/2006

Ala Sharaiha

U16.12-0005

4371

27367 7590 03/07/2008
WESTMAN CHAMPLIN & KELLY, P.A.
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3319

EXAMINER

DINH, TRINH VO

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

03/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,516	Applicant(s) SHARAIHA ET AL.	
	Examiner Trinh Vo Dinh	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/17/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawing

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “at least one parasitic wire and one radiating wire adjacent to said radiating wire with which said parasitic wire is associated cross over one another” in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2821

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 and 11 recite "one of the ends of each of said radiating wires is connected ... to one of the ends of said radiating wire with which said parasitic wire is associated". The claimed limitation is vague since in the disclosure, the ends of the radiating wire are not connected together. For the purpose of an examination, it has been assumed that the proper wording is as follows "one end of each of said parasitic wires is connected...to one of the ends of said radiating wire...".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fillipovic (US 6,278,414 of record).

Respecting claim 1, Fillipovic discloses a helical antenna including at least one helix (column 1, line 15) consisting of at least two radiating wires (712 in Fig. 8, 1124 in Fig. 11A), wherein at least one of said radiating wires is associated with a parasitic wire (714 in Fig. 7, 1122 in figure 11A; column 9, lines 6-18) of which the width is smaller than or equal to that of said

Art Unit: 2821

radiating wire (figure 11A) in such a way as to broaden the band width of said antenna (column 9, lines 27-29).

Respecting claims 2-4 and 7-8, Fillipovic discloses that each of said parasitic wires is connected to the ground (911 in Fig. 11B, col. 9 lines 19-30), said radiating wires and said at least one parasitic wires are printed on a substrate (406, Figs. 4-6, col. 4 lines 54-63), and each of said radiating wires (1124) is associated with a parasitic wire (1122) narrower than or equal in width to said radiating wire, each of said parasitic wires is farther from said associated radiating wire than from at least one of said other radiating wire (Fig. 11A), and each of said parasitic wires is parallel to the radiating wire with which it associated (Figs. 11A-11B).

Respecting claim 6, Fillipovic discloses that each of said parasitic wires is positioned with respect to said associated radiating wire so as to inherently optimise the coupling between said parasitic wire and said associated radiating wire.

Respecting claims 9-12, Fillipovic discloses that each of said parasitic wires has substantially the same length as the radiating wire with which it is associated (Figs. 7B and 8B), one of the ends of each of said radiating wires is connected by a conductive connection (716) to one of the ends of said radiating wire (712) with which said parasitic wire (714) is associated (Fig. 8, col. 8 lines 55-58), one of the ends of each of said parasitic wires is connected by coupling to one of the ends of said radiating wire with which said parasitic wire is associated (Figs. 8 or 11), and said radiating wires are printed on a first surface of a substrate and in that said parasitic wires are printed on a second surface of said substrate (col. 8 lines 42-52, col. 9 lines 19-24).

Respecting claims 13-17 and 19, Fillipovic discloses that at least one parasitic wire and one radiating wire adjacent to said radiating wire with which said parasitic wire is associated cross over one another (Fig. 11B), the end of said radiating wires not connected to a parasitic wire is connected to a feedline (730) of a power supply circuit (~~Fig. 9B and 11~~), at least one of said helices is a quadrifilar helix, including four wires (Figs. 6-8, 11), said radiating wires forming a helix are all the same size and ~~in that~~ said parasitic wires are all the same size (Fig. 8b), at least one of said radiating and/or parasitic wires is formed by at least two segments, in which the angles of wrap of at least two of said segments are different and determined randomly or pseudo-randomly using global optimisation means (col. 6 lines 36-42), and said radiating wires have a length substantially different from a multiple of the wavelength corresponding to the mean frequency of the transmission band of said antenna, divided by 4 (col. 2 lines 15-20).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fillipovic.

Fillipovic further discloses, in column 9, lines 23-29, that the width of the parasitic wire is smaller than that of the radiating wire in order to broaden the band width of the antenna. However, Fillipovic does not suggest ratio between the width of each of said parasitic wires and the width of said associated radiating wire is less than or equal to 0.15. It would have been obvious to one having ordinary skill in the art to select widths of antenna elements since it has

Art Unit: 2821

been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fillipovic in view of Louvigne ("Broadband tapered printed quadrifilar helical antenna" of record)

Fillipovic discloses every features of the claimed invention except the use of wires of variable width. Louvigne discloses, in Fig. 1, at least one of said radiating and/or parasitic wires has a variable width, varying regularly and consistently between a maximum and a minimum width. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have Fillipovic's radiating elements with variable width as taught by Louvigne. Doing so would improve the bandwidth of the helical antenna.

Inquiry

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2821

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art unit 2821

February 28, 2008

/Trinh Vo Dinh/

Primary Examiner, Art Unit 2821